IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	)	
	)	
Oleg Wasynczuk et al.	) Before the Examiner	
	)	
Serial No. 09/884,528	)	
	) August 23, 2001	
Filed June 19, 2001	)	
	)	
DISTRIBUTED SIMULATION	)	

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, DC 20231

Sir:

Pursuant to 37 C.F.R. §1.56, Applicants wish to bring to the attention of the Examiner the following patents, publications and/or other information which are also listed on the attached PTO Form 1449A (modified). Copies of cited items are enclosed in accordance with 37 C.F.R. § 1.98. The below information has not been previously submitted in this application has not been heretofore cited by an Examiner, and relates generally to the state of the art in simulation, distributed computing, and messaging.

Patent No.	Patentee	Issue Date
4,456,994	Segarra	06/26/1984
4,506,324	Healy	03/19/1985

Information Disclosure Statement
DISTRIBUTED SIMULATION
Serial No. 09/884,528
Inventor: Wasynczuk et al.
Attorney Docket: 16410-108:133150
Page 1 of 5

Patent No.	Patentee	Issue Date
5,251,159	Rowson	10/05/1993
5,519,848	Wloka et al.	05/21/1996
5,640,504	Johnson, Jr.	06/17/1997
5,680,551	Martino, II	10/21/1997
5,715,184	Tyler et al.	02/03/1998
5,768,160	Kakegawa	06/16/1998
5,774,693	Hsu et al.	06/30/1998
5,784,612	Crane et al.	07/21/1998
5,793,968	Gregerson et al.	08/11/1998
5,794,005	Steinman	08/11/1998
5,801,938	Kalantery	09/01/1998
5,826,060	Santoline et al.	10/20/1998
5,845,116	Saito et al.	12/01/1998
5,850,345	Son	12/15/1998
5,862,366	Schmidt et al.	01/19/1999
5,881,267	Dearth et al.	03/19/1999
5,909,542	Paquette et al.	06/01/1999
5,910,903	Feinberg et al.	06/08/1999
5,983,265	Martino, II	11/09/1999
5,999,734	Willis et al.	12/07/1999
6,053,947	Parson	04/25/2000
6,106,297	Pollak et al.	08/22/2000
6,134,514	Liu et al.	10/17/2000
6,163,801	O'Donnell et al.	12/19/2000

L. Birta, O. Abou-Rabia; *Parallel Block Predictor-corrector Methods for Ode's*; IEEE Trans. Computers, C-36:3 (March, 1987)

O. Abou-Rabia, L.G. Birta, M. Chen; *A Comparative Evaluation of the BPC and PPC Methods for the Parallel Solution of Ode's*; Trans. Soc. For Computer Sim.; 6:4:pp 265-290

M.L. Crow, M. Illie; *The Parallel Implementation of the Waveform Relaxation Method for Transient Stability Simulations*; IEEE Trans. Power Systems; 5:3:pp 922-932 (August, 1990)

H. Mori, K. Takeda; *Parallel Simulated Annealing for Power System Decomposition; IEEE Trans. Power Systems*; 9:2:pp 785-795 (May, 1994)

K. K. Fung, et al.; *Concurrent Simulation of Decouple Power Electronics Circuits*; Euro. Power Elec.; 18-23 (Sept. 1993)

Information Disclosure Statement
DISTRIBUTED SIMULATION
Serial No. 09/884,528
Inventor: Wasynczuk et al.
Attorney Docket: 16410-108:133150
Page 2 of 5

L.G. Birta, M. Yang; *Some Stepsize Adjustment Procedures for Parallel ODE Solvers*; Trans. Soc. for Computer Sim., 12:4:pp 303-324

N. huu Cong; *A Parallel DIRK Method for Stiff Initial-value Problems*; J. Comp. and Appl. Math., 54:pp 121-127 (1994)

P.J. van der Houwen et al.; *Parallel Iteration Across the Steps of High-Order Runge-Kutta Methods for Nonstiff Initial Value Problems*; J. of Comp. and Appl. Math., 60:pp 309-329 (1995)

W.A. van der Veen; *Step-Parallel Algorithms for Stiff Initial Value Problems*; Comp. in Math. Appl.; 30:11:pp 9-23 (1995)

J.J.B. de Swart, J.G. Blom; *Experiences with Sparce Matrix Solvers in Parallel ODE Software*; Comp. In Math. Appl.; 31:9:pp43-55 (1996)

I..M. Llorente, et al.; *Some Aspects About the Stability of Scientific Applications on Parallel Architectures*; Parallel Comp. 22:pp 1169-1195 (1996)

P. Amodio, L. Brugnano; *A Note on the Efficient Implementation of Implicit Methods for ODEs*; J. of Comp. and Appl. Math.; 87:pp 1-9 (1997)

L.G. Birta and L. Yang; *Some P(EC)^{m}E Methods for Parallel Solution of ODEs*; Math and Comp. in Sim.; 43:pp 171-182 (1997)

I. Martin, F. Tirado; *Relationships Between Efficiency and Execution Time of Full Multigrid Methods on Parallel Computers; IEEE Trans. Parallel and Dis. Sys.*; 8:6:pp 562-573 (June, 1997)

E. Messina, et al.; *Parallel Interactive Linear Solvers for Multistep Runge-Kutta Methods*; J. of Comp. and Appl. Math.; 85:pp 145-167 (1997)

J. Huang, et al.; *A Model and Design of a Fully Distributed Computing Environment for Virtual Reality*; IEEE, pp 160-168 (March, 1997)

Z. Yao, et al.; *Power System Simulation by an Improved WRM*; IEEE Int'l. Conf. On Control Appl.; pp 80-585 (October 5-7, 1997)

S. Veseli; *Multidimensional Integration in a Heterogeneous Network Environment*; Comp. Physics Comm.; 108:pp 9-19 (1998)

N. Adbel-Jabbar, et al.; *A Partially Decentralized State Observer and Its Parallel*

Information Disclosure Statement
DISTRIBUTED SIMULATION
Serial No. 09/884,528
Inventor: Wasynczuk et al.
Attorney Docket: 16410-108:133150
Page 3 of 5

Computer Implementation; Ind. Eng. And Chem. Res.; 37:pp 2741-2760 (1998)

H. Vin; *Supporting Next-Generation Distributed Applications*; IEEE Project Reports, pp 78-83 (July-Sept., 1998)

E. deDoncker, et al.; *Large-Scale Parallel Numerical Integration*; J. of Comp. and Appl. Math. 112:pp 29-44 (1999)

P.J. van der Houwen and E. Messina; *Parallel Adams Methods*; J. of Comp. and Appl. Math.; 101:pp 153-165 (1999)

N. Abdel-Jabbar, et al.; *A Multi-rate Parallel-modular Algorithm for Dynamic Process Simulation Using Distributed Memory Multicomputers*; Comp. and Chem. Eng.; 23:pp 733-761 (1999)

M. Pruetim, et al.; *An Environment to Develop Parallel Code for Solving Partial Differential Equation-based Problems*; J. of Sys. Arch.; 45:pp 543-554 (1999)

T. Kato and T. Kataoka; *Circuit Analysis by a New Multirate Method*; Elec. Eng. In Japan; 126:4:pp 55-62 (1999)

L. Pollini and M. Innocenti; *A Synthetic Environment for Dynamic Systems Control and Distributed Simulation*; IEEE Con. Sys. Mag.; pp 49-61 (April, 2000)

H. Zhang; *A Note on Windowing for the Waveform Relaxation*

T. Sterling, et al.; *Achieving a Balanced Low-cost Architecture for Mass Storage Management Through Multiple Fast Ethernet Channels on the Beowulf Parallel Workstation*

T. Sterling, et al.; *Beowulf: A Parallel Workstation for Scientific Computation*
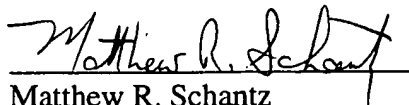
C. Reschke, et al.; *A Design Study of Alternative Network Topologies for the Beowulf Parallel Workstation*

T. Sterling, et al.; *Communication Overhead for Space Science Applications on the Beowulf Parallel Workstation*

This Statement is being submitted within three months of the filing date of the above-referenced application, and prior to the mailing of any Office Action on the merits. It is thus believed that no fee is required for consideration of the submitted items. Should any fee be

Information Disclosure Statement
DISTRIBUTED SIMULATION
Serial No. 09/884,528
Inventor: Wasynczuk et al.
Attorney Docket: 16410-108:133150
Page 4 of 5

required, however, please charge such fee to Deposit Account No. 23-3030, but not to include any payment of issue fees.

Respectfully submitted,

Matthew R. Schantz
Reg. No. 40,800
Woodard, Emhardt, Naughton,
  Moriarty & McNett
Bank One Center Tower
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456

Information Disclosure Statement
DISTRIBUTED SIMULATION
Serial No. 09/884,528
Inventor: Wasynczuk et al.
Attorney Docket: 16410-108:133150
Page 5 of 5

		ATTY. DOCKET NO. 16410-108		SERIAL NO. 09/884,528		
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		APPLICANT WASYNCZUK, Oleg, et al.				
		FILING DATE June 19, 2001		GROUP		

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
		4,456,994	06/26/1984	Segarra	371	16	
		4,506,324	03/19/1985	Healy	364	200	
		5,251,159	10/05/1993	Rowson	364	578	
		5,519,848	05/21/1996	Wloka et al.	395	500	
		5,640,504	06/17/1997	Johnson, Jr.	395	182.02	
		5,680,551	10/21/1997	Martino, II	395	200.15	
		5,715,184	02/03/1998	Tyler et al.	364	578	
		5,768,160	06/16/1998	Kakegawa	364	578	
		5,774,693	06/30/1998	Hsu et al.	395	500	
		5,784,612	07/21/1998	Crane et al.	395	653	
		5,793,968	08/11/1998	Gregerson et al.	395	200.39	
		5,794,005	08/11/1998	Steinman	395	500	
		5,801,938	09/01/1998	Kalantery	364	131	
		5,826,060	10/20/1998	Santoline et al.	395	500	
		5,845,116	12/01/1998	Saito et al.	395	673	
		5,850,345	12/15/1998	Son	364	578	
		5,862,366	01/19/1999	Schmidt et al.	395	500	
		5,881,267	03/09/1999	Dearth et al.	395	500	
		5,909,542	06/01/1999	Paquette et al.	395	200.33	
		5,910,903	06/08/1999	Feinberg et al.	364	578	

EXAMINER	DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary) Page 2 of 4	ATTY. DOCKET NO. 16410-108	SERIAL NO. 09/884,528
	APPLICANT WASYNCZUK, Oleg, et al.	
	FILING DATE June 19, 2001	GROUP

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
		5,983,265	11/09/1999	Martino, II	709	206	
		5,999,734	12/07/1999	Willis et al.	395	706	
		6,053,947	04/25/2000	Parson	703	14	
		6,106,297	08/22/2000	Pollak et al.	434	16	
		6,134,514	10/17/2000	Liu et al.	703	17	
		6,163,801	12/19/2000	O'Donnell et al.	709	213	

EXAMINER	DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		Atty. Docket No. 16410-108	Serial No. 09/884,528
Page 3 of 4		Applicant WASYNCZUK, Oleg, et al.	
		Filing Date June 19, 2001	Group

Examiner Initial		PUBLICATION
		L. Birta, O. Abou-Rabia; *Parallel Block Predictor-Corrector Methods for Ode's*; IEEE Trans. Computers, C-36:3 (March, 1987)
		O. Abou-Rabia, L.G. Birta, M. Chen; *A Comparative Evaluation of the BPC and PPC Methods for the Parallel Solution of Ode's*; Trans. Soc. for Computer Sim.; 6:4:pp 265-290
		M.L. Crow, M. Illie; *The Parallel Implementation of the Waveform Relaxation Method for Transient Stability Simulations*; IEEE Trans. Power Systems; 5:3:pp 922-932 (August, 1990)
		H. Mori, K. Takeda; *Parallel Simulated Annealing for Power System Decomposition*; IEEE Trans. Power Systems; 9:2:pp 785-795 (May, 1994)
		K. K. Fung, et al.; *Concurrent Simulation of Decouple Power Electronics Circuits*; Euro. Power Elec.; 18-23 (Sept. 1993)
		L.G. Birta, M. Yang; *Some Stepsize Adjustment Procedures for Parallel ODE Solvers*; Trans. Soc. for Computer Sim., 12:4:pp 303-324
		N. Huu Cong; *A Parallel DIRK Method for Stiff Initial-Value Problems*; J. Comp. and Appl. Math., 54:pp 121-127 (1994)
		P.J. van der Houwen et al.; *Parallel Iteration Across the Steps of High-Order Runge-Kutta Methods for Nonstiff Initial Value Problems*; J. of Comp. and Appl. Math., 60:pp 309-329 (1995)
		W.A. van der Veen; *Step-Parallel Algorithms for Stiff Initial Value Problems*; Comp. in Math. Appl.; 30:11:pp 9-23 (1995)
		J.J.B. de Swart, J.G. Blom; *Experiences with Sparce Matrix Solvers in Parallel ODE Software*; Comp. In Math. Appl.; 31:9:pp43-55 (1996)
		I.M. Llorente, et al.; *Some Aspects About the Stability of Scientific Applications on Parallel Architectures*; Parallel Comp. 22:pp 1169-1195 (1996)
		P. Amodio, L. Brugnano; *A Note on the Efficient Implementation of Implicit Methods for ODEs*; J. of Comp. and Appl. Math.; 87:pp 1-9 (1997)
		L.G. Birta and L. Yang; *Some P(EC)^{m}E Methods for Parallel Solution of ODEs*; Math and Comp. in Sim.; 43:pp 171-182 (1997)
		I. Martin, F. Tirado; *Relationships Between Efficiency and Execution Time of Full Multigrid Methods on Parallel Computers*; IEEE Trans. Parallel and Dis. Sys.; 8:6:pp 562-573 (June, 1997)
		E. Messina, et al.; *Parallel Interactive Linear Solvers for Multistep Runge-Kutta Methods*; J. of Comp. and Appl. Math.; 85:pp 145-167 (1997)
		J. Huang, et al.; *A Model and Design of a Fully Distributed Computing Environment for Virtual Reality*; IEEE, pp 160-168 (March, 1997)
		Z. Yao, et al.; *Power System Simulation by an Improved WRM*; IEEE Int'l. Conf. on Control Appl.; pp 80-585 (October 5-7, 1997)

INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Atty. Docket No. 16410-108	Serial No. 09/884,528

Page 4 of 4	Applicant WASYNCZUK, Oleg, et al.	

	Filing Date June 19, 2001	Group

Examiner Initial		PUBLICATION	
		S. Veseli; *Multidimensional Integration in a Heterogeneous Network Environment*; Comp. Physics Comm.; 108:pp 9-19 (1998)	
		N. Adbel-Jabbar, et al.; *A Partially Decentralized State Observer and Its Parallel Computer Implementation*; Ind. Eng. And Chem. Res.; 37:pp 2741-2760 (1998)	
		H. Vin; *Supporting Next-Generation Distributed Applications*; IEEE Project Reports, pp 78-83 (July-Sept., 1998)	
		E. deDoncker, et al.; *Large-Scale Parallel Numerical Integration*; J. of Comp. and Appl. Math. 112:pp 29-44 (1999)	
		P.J. van der Houwen and E. Messina; *Parallel Adams Methods*; J. of Comp. and Appl. Math.; 101:pp 153-165 (1999)	
		N. Abdel-Jabbar, et al.; *A Multi-rate Parallel-Modular Algorithm for Dynamic Process Simulation Using Distributed Memory Multicomputers*; Comp. and Chem. Eng.; 23:pp 733-761 (1999)	
		M. Pruetim, et al.; *An Environment to Develop Parallel Code for Solving Partial Differential Equation-Based Problems*; J. of Sys. Arch.; 45:pp 543-554 (1999)	
		T. Kato and T. Kataoka; *Circuit Analysis by a New Multirate Method*; Elec. Eng. In Japan; 126:4:pp 55-62 (1999)	
		L. Pollini and M. Innocenti; *A Synthetic Environment for Dynamic Systems Control and Distributed Simulation*; IEEE Con. Sys. Mag.; pp 49-61 (April, 2000)	
		H. Zhang; *A Note on Windowing for the Waveform Relaxation*	
		T. Sterling, et al.; *Achieving a Balanced Low-Cost Architecture for Mass Storage Management Through Multiple Fast Ethernet Channels on the Beowulf Parallel Workstation*	
		T. Sterling, et al.; *Beowulf: A Parallel Workstation for Scientific Computation*	
		C. Reschke, et al.; *A Design Study of Alternative Network Topologies for the Beowulf Parallel Workstation*	
		T. Sterling, et al.; *Communication Overhead for Space Science Applications on the Beowulf Parallel Workstation*	

EXAMINER	DATE CONSIDERED

*Examiner: initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. patent application of:	)	
	)	Before the Examiner
Oleg Wasynczuk, et al.	)	
	)	Ayal I. Sharon
Serial No. 09/884,528	)	
	)	Group Art Unit 2123
Filed June 19, 2001	)	
	)	
DISTRIBUTED SIMULATION	)	
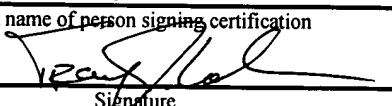
INFORMATION DISCLOSURE STATEMENT

Mail Stop AF
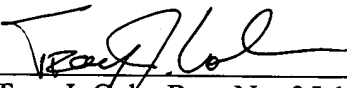Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the duty of disclosure in accordance with 37 C.F.R. §1.56, Applicant wishes to bring to the attention of the Examiner the items of information listed on the enclosed Information Disclosure Citation Form. This information has not been previously submitted in this application, and has not been heretofore cited previously by the Examiner. Copies of all non-patent literature are enclosed in accordance with 37 CFR 1.98(a).

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office to 571.273.8300 on the date shown below.
Troy J. Cole
Print name of person signing certification
(signature)
Signature
January 17, 2006
Date of Signature

The filing of this Information Disclosure Statement shall not be construed as an admission that the information cited is, or is considered to be, material to patentability as defined in §1.56(b).

This Statement is being submitted after the mailing date of a final Office Action or Notice of Allowance and prior to payment of the issue fee, and thus a Request for Continued Examination (RCE) and fee of 37 CFR §1.17(e) have been filed. Should any additional fees be deemed necessary, the Commissioner is authorized to charge such fees to Deposit Account No. 23-3030, but is not to include payment of issue fees.

Respectfully submitted,

By _____
Troy J. Cole, Reg. No. 35,102
Woodard, Emhardt, Moriarty, McNett & Henry LLP
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456

Information Disclosure Statement
Serial No. 09/884,528
Group Art Unit 2123
TJC.le 381249

Page 2 of 2

Attorney Docket No. 31122-8

	Complete if Known
Substitute for form 1449A/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(use as many sheets as necessary)*	Application Number: 09/884,528
	Filing Date: June 19, 2001
	First Named Inventor: Oleg Wasynczuk et al.
	Group Art Unit: 2123
	Examiner Name: Ayal I. Sharon

Sheet	1	of	1	Attorney Docket No.	31122-8

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s) publisher city and/or country where published	T[6]
		Dommel, *Digital Computer Solution of Electromagnetic Transients in Single- and Multiphase Networks*, IEEE Transactions on Power Apparatus and Systems, Vol. PAS-88, No. 4, April 1969	☐
		Masuzawa, Fukui, and Smith, *Cardiovascular simulation Using a Multiple Modeling Method on a Digital Computer--Simulation of Interaction Between the Cardiovascular System and Angiotensin II*, Little , Brown and Company, 1992	☐
		Quinn, *Parallel Computing: Theory and Practice*, McGraw-Hill Series in Computer Science, 1994	☐
		Burrage, *Parallel and Sequential Methods for Ordinary Differential Equations*, Oxford Press, 1995	☐
		Ferscha, *Parallel and Distributed Simulation of Discrete Event Systems*, Handbook of Parallel and Distributed Computer, McGraw-Hill, 1995	☐
		MPI-2: Extensions to the Message-Passing Interface, Message Passing Interface Forum, University of Tenneessee, Knoxville, Tennessee, 1995, 1996, 1997	☐
		Xavier and Iyengar, *Introduction to Parallel Algorithms*, Wiley Series on parallel and Distributed Computing, 1998	☐

Examiner Signature		Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the emperor must precede the serial number of the patent document. [5] Kind of document by the apOpropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

Information Disclosure Citation List
Wasynczuk et al, USSN 09/884,528
TJC.le 381240
Page 1 of 1
Date Submitted: January 17, 2006
Atty. Docket: 31122-8